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The purpose of this study was to design instruments which would discriminate between th child who is a conformist or non-conformist and the child who is free to use either conforming or non-conforming behavior. In this way the nature and development of creative ability which is related to conformity in behavior can be studied.

Two instruments were developed for use in the measurement of conforming and nonconforming behavior and whether this behavior was free or compulsive. The tests consisted of specially prepared color preference tests and form block puzzles.

In the pre-school age children it was found that parents had a significant influence on the children's responses, whereas peers did not. There was a significant difference between boys' and girls' responses. Girls tended toward more strict conformity than did boys. Children's backgrounds would have to be studied before hypotheses about characteristics essential for creative expression could be formed. Implications for future research are discussed.

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Cooperative Research Project No. 1967

Elizabeth Kezia Starkweather

Oklahoma State University
of
Agriculture and Applied Science

Stillwater, Oklahoma 74075

1964

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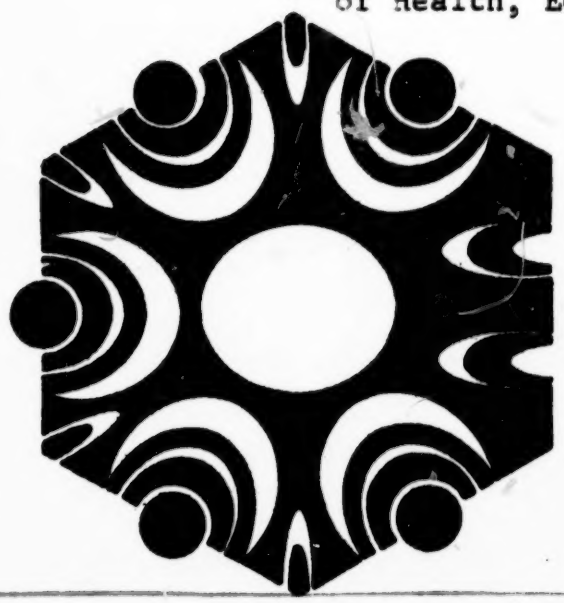

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CONFORMITY AND NONCONFORMITY AS INDICATORS OF CREATIVITY IN PRESCHOOL CHILDREN

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CONFORMITY AND NONCONFORMITY AS INDICATORS OF CREATIVITY IN PRESCHOOL CHILDREN

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PROBLEM

The present research is seen as a contribution to the study of the nature and development of creative ability. Longitudinal validation studies of creative ability are needed; and for these, instruments must be developed which can be used for the identification of the young child who is potentially creative.

Nonconformity, which is postulated as a motivational characteristic of the creative person, was chosen for study. Theoretically, the creative person is willing to be a nonconformist, but he is not a compulsive nonconformist. Thus the problem was one of developing instruments which would discriminate between the child who is a compulsive conformist or nonconformist and the child who is free to use either conforming or nonconforming behavior.

Rationale

Carl Rogers (1959) defined the creative process as "the emergence in action of a novel relational product, growing out of the uniqueness of the individual on the one hand, and the materials, events, people, or circumstances of his life on the other"; and he defined the motivation for creativity as "man's tendency to actualize himself, to become his potentialities". (pp. 71-72). Here Rogers implied that the individual

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The author wishes to express her appreciation to Mrs. Mary Frances Henry for the art work on the form boards and to Mrs. Carol Morgan Foster and Mrs. Frieda Cowling for their assistance in gathering the data.

will become or achieve his potentialities by using his own means rather than those forced upon him. To do this, the individual must be relatively free from inhibition, free to make novel combinations of ideas, free to express his curiosity and imagination; his need for approval and affiliation must be secondary to his willingness to try the difficult, to take a risk, and his willingness to be different, to be a nonconformist.

Lowenfeld (1959), believing that every child is born with creative ability, referred to the untapped creative resources of the individual as potential creativity and to that part of his creativeness which an individual uses in his work and actions as functional creativity. Similarly, Golovin (1963) referred to creative facility and creative ability, and expressed the point of view that the only identification possible at an early stage of an individual's development is that of creative facility. The question remains as to whether creative potential can be identified before there has been creative achievement.

Theoretically, a study of the development of creative ability should start with study of the infant; however, the complex and elusive quality of creativity has made such an approach impractical. Instead, much of the recent research has been devoted to the study of highly creative adults, usually identified as creative by their products or their work. The personalities of these adults have been studied in an attempt to identify the various characteristics which are factors in creative ability or which are necessary for the expression of creative ability.

Taylor (1959) categorized the characteristics of the creative individual as intellectual characteristics and motivational-interest characteristics. The intellectual characteristics are those which seem

to be valid indicators of creative talent, e.g., originality, adaptive flexibility, and the ability to sense problems. Motivational-interest characteristics are those which facilitate the expression of creative ability, e.g., tolerance of ambiguity, freedom to be a nonconformist, and willingness to try the difficult. Guilford (1957) found significant correlations between measures of traits of temperament and motivation (motivational-interest characteristics) and measures of factors of ability within the area of creative performing (intellectual characteristics); e.g., impulsiveness and ascendance are related to ideational fluency; tolerance of ambiguity and less need for discipline and orderliness are related to originality. Taylor (1959) expressed the "hunch" that certain of the intellectual components may underlie certain motivational forces in the creative person. Similarly, Torrance (1962) hypothesized that individuals develop certain attitudes which facilitate creative growth and others which operate as obstacles to creativity; and Getzels and Jackson (1962) stated that "general cognitive style and general motivational structure are inextricably related and can be separated only for analytic purposes". (p. 28). These theoretical discussions and research reports suggest that the identification of motivational-interest characteristics may provide the means for identifying young children who are potentially creative. In other words, it may be possible to identify the creative child by his psychological freedom, his willingness to try the difficult, and his freedom to use conforming and nonconforming behavior.

Torrance (1962) and Getzels and Jackson (1962) developed instruments for the measurement of characteristics which are indicative of creative ability or essential for its expression, and used these instruments in

the study of school age children and adults. Torrance, as a result of his findings, postulated that restrictions on manipulativeness and curiosity, overemphasis on sex roles, overemphasis on prevention, and premature attempts to eliminate fantasy are special blocks to creativity. Each of these can be seen as a restriction which curtails the individual's freedom. Similarly, this need for freedom in the creative process has been indicated by Getzels and Jackson in their comparison of highly intelligent and highly creative adolescents. The highly creative were more stimulus-free and less categorical; they had an internal locus of evaluation rather than depending upon the evaluative judgment of others; and they were able "to toy with elements and concepts" and "to make the given problematic". These studies give additional support to the contention that certain motivational characteristics are essential for the expression of creative ability.

Still other personality characteristics, which cannot be classified as intellectual or motivational, have been found to correlate highly with creative ability. In a number of studies (Stein and Heinze, 1960) the creative person has been described as stubborn, somewhat uncultured and primitive, haughty and self-satisfied. These are characteristics which the writer cannot accept as indicative of creative ability or as essential for the expression of creative ability; rather, these characteristics seem to be by-products or defense mechanisms which some creative individuals develop. If this is true, then an increased understanding of the development of creative ability should make possible the acceptance and guidance of the creative child so that his need for these defense mechanisms is lessened, if not eliminated.

Longitudinal studies of the development of creative ability are needed; and the initiation of such studies is dependent upon the development of instruments which can be used for the early identification of characteristics which may be related to creativity. The present research is seen as a contribution to this area of study; and as such, it is of particular significance to education.

Significance to the Field of Education

The development of creative ability is one of the primary objectives of education. Educators make a distinction between knowing and discovering, between remembering and inventing, between intelligent behavior and creative behavior; but in the wide use of intelligence tests and achievement tests to evaluate ability and progress, the child's creative ability has been overlooked.

The problem is paradoxical. Research has shown that creative thinking contributes importantly to the acquisition of information (Getzels and Jackson, 1962; Torrance, 1962); yet when the focus of education is on the acquisition of information, the tendency is to emphasize rote momory and conformity which, in turn, inhibit creative thinking. Thus the problem becomes one of how educators can leave the imaginations of children free and yet give them the facts and experiences necessary for possible creative activity.

A similarly paradoxical situation is evident in the socialization processes of the preschool years. In teaching socially acceptable behavior, the parent teaches conformity to prescribed standards, and at the same time the parent expects the child to show increased independence. It is possible that the root of the problem with which we are faced in education lies in the socialization processes of early

childhood, particularly independence training. During the preschool years individual differences can be seen in the need to conform, willingness to try the difficult, freedom to explore and inquire, and other characteristics which probably relate to expressions of creative ability.

Young children are active and free in imaginative play; but as they grow older, they become more stereotyped in their behavior. Torrance (1962) has observed that inasmuch as the infant's lack of vocabulary limits his ability to learn "by authority", his learning is necessarily creative; he senses problems, makes guesses, tests and modifies them and communicates them in his limited way. As he grows older, the urge to inquire, to invent, to perform is apparently stifled. Stoddard (1959) points to the conformity and fear of deviation in our culture pattern as evidence that the creative potential was stifled in millions of school children, now grown up, "who did not get above rote learning, or at least did not stay above it". (p. 181). These observations give rise to the serious question of whether educational methods can change this pattern of development, this trend from the active and free expression of the young child to the more stereotyped behavior of the older child and adult. An understanding of the forces that inhibit or encourage the expression of the creative potential of the young child should provide an answer to this question. Taylor and Barron (1963) have expressed a similar point of view in their statement that we need to understand the fundamental nature of creative talent and learn how to identify it, so that educational and environmental programs more favorable to creative talent can be soundly developed.

Torrance (1959) has cited one of the school's responsibilities as that of helping the creative child to be "less obnoxious" without

sacrificing his creativity. This may well be the school's responsibility for those creative children who are in school at this time and who are exhibiting obnoxious behavior. However, taking a long range view of the problem, one must ask whether the simultaneous development of creative ability and obnoxious behavior is unavoidable. The answer to this question may be found when preschool children with creative potential can be identified and longitudinal studies of creative ability initiated.

OBJECTIVES

1. To develop research instruments for the measurement of conforming and nonconforming behavior among preschool children, and where possible, to design the instruments so that the compulsive quality and the conforming quality of the children's behavior are measured simultaneously. Hypotheses related to this major objective can be stated as follows:

Hypothesis 1. The potency of the situation will influence the conforming behavior of the child.

a. In a given situation, children will differ in their conforming behavior. (e.g., Opportunity to conform to adults will be a more potent influence for some children than for others.)

b. The conforming behavior of any one child will vary from one situation to another. (e.g., The strength of a child's preference for the behavior involved in the research task will influence his conforming behavior.)

Hypothesis 2. The relationship between the conformity-nonconformity dimension in children's behavior and their freedom to express themselves in exploring and manipulating their environment will be curvilinear.

Freedom-to-express is essentially psychological freedom. It it broader than, but includes, noncompulsiveness. Theoretically, the opposite of this freedom includes inhibited behavior (behavior in response to a restraining force) and compulsive behavior (behavior in response to a compelling force).

Hypothesis 3. The relationship between children's compulsiveness in their conformity or nonconformity and their freedom to express themselves in exploring and manipulating their environment will be linear.

2. To develop, on the basis of leads obtained during the present study, a plan for the development of instruments to measure other characteristics postulated as indicative of creative ability or essential for its expression.

3. To develop a plan for the study of the relationships among the characteristics essential for the expression of creative ability, explicity those for which instruments for use with young children have been developed.

RELATED RESEARCH

The study of the creative child has been confined, for the most part, to the school age child and the adolescent, as represented by the work of Torrance and of Getzels and Jackson. Instruments have been developed for the measurement of "intellectual" characteristics, such as originality, divergent thinking and constructive cognition; and these characteristics have been studies in relation to "motivational" characteristics, such as nonconformity and willingness to take a risk. In general, writers agree that these two types of characteristics can

be separated only in theory, and that, certain motivational characteristics are required for the expression of creative talent.

The study of creative ability in children of preschool age has been extremely limited; however, the work of Torrance (1962b), Andrews (1930), Markey (1935), and Northway and Rooks (1955) have implications for the present research.

In a study of cultural discontinuities and the development of originality in thinking, Torrance (1962b) included the work of Andrews (1930) in order to extend his generalized developmental curve to include the child of preschool age. For children in the United States, Torrance found one drop in creative thinking abilities at about age five. This finding indicates the importance of developing instruments for use with young children and of studying the development of creativity during the preschool years.

Markey (1935) studied the imaginative behavior of preschool children. She observed the children during free play and in two experimental situations, one a block building game and the other a housekeeping game. The individual differences and group differences which she found led to the conclusions that (a) the same test of imagination is not equally valid for all ages, (b) the level of the child's understanding or comprehension influences the type of imaginative response, and (c) a single test of imagination does not tap all the imaginative resources of the individual. These conclusions can and should serve as definite guides for the development of instruments to be used in the study of the preschool child.

Northway and Rooks (1955) studied the relationship between creativity and sociometric status in children of preschool age. In their research

the measure of creativity was actually a measure of nonconformity. A simple formboard task was devised in which the child was free to follow a model or not. Those who chose to follow the model were termed copiers, and were considered to be noncreative. Those who used their own ingenuity were termed noncopiers and were considered to be creative. This research suggests the use of formboards in studying the conforming behavior of young children.

A study of the preschool child's psychological freedom, or his freedom to express himself in exploring and manipulating his environment, was undertaken by Azbill (1961) under the supervision of the writer. The freedom with which a child expressed himself was determined by the variety of his play responses when he was given an opportunity to play by himself with a series of simple toys. In the present study, this instrument is adapted for use in an exploration of the relationship of psychological freedom to conformity and nonconformity. The details of the Azbill study are presented in Appendix A, page 36.

THE DEVELOPMENT OF INSTRUMENTS FOR THE MEASUREMENT OF CONFORMITY AND NONCONFORMITY

Criteria for the Instruments

An instrument developed for the measurement of conforming and nonconforming behavior should provide the child with an opportunity to make a choice in a situation in which he can follow a model or respond freely according to his own preferences.

A series of pilot studies served to clarify the criteria for the instruments. (a) The compulsive quality and the conforming quality of a child's behavior must be measured independently. The child who is a rigid nonconformist is no more free than the child who is a

rigid conformist. (b) Conforming behavior must be studied in a variety of situations. The opportunity to conform to parents or peers, for example, may be more potent than the opportunity to conform in an impersonal situation. (c) The instrument must be adjustable in order that the opportunity to conform be of similar potency for all children. Conforming behavior is common when a child has an opportunity to conform to peers whom he likes, whereas the reverse is true when he dislikes the peers. Similarly, the child's preference for objects used in the task may affect his responses. He will have greater difficulty choosing between two objects when he likes them both than when he likes only one. (d) Sex and age are also factors which should be controlled, inasmuch as studies of older children have indicated sex differences in creative ability (Torrance, 1962).

The Measurement of Social Conformity and Nonconformity

Subjects

The subjects for this part of the research were 220 children, boys and girls, ranging in age from 2 years 9 months to 5 years 11 months. The group included children from two Oklahoma communities, the majority of whom were in attendance at nursery schools, kindergartens, day care centers and Bible Schools.

Color Preference Task

A color preference task, designed for the measurement of social conformity and nonconformity, consisted of three steps: (a) Each child indicated his color preferences by ranking 13 colors. From this ranking, five colors which ranged from first choice to last were chosen for use in the subsequent steps of the research. (b) Each child indicated the

strength of his color preferences by selecting the color he preferred when the five colors were presented to him in pairs. (c) Each child then made color selections when there was an opportunity to conform to his friends, and again to his parents. In this last step, a control group of children made color selections with no opportunity to conform.

Color Preferences. A color wheel, consisting of 13 different colored strips of paper attached to a cardboard disc, was presented to each child. He ranked the colors by tearing off the one he liked best, and then repeated this, one color at a time, until all colors had been torn from the wheel. The five colors which a child ranked, 1, 4, 7, 10 and 13, were then used for his part in the subsequent steps of the research. In this way, when given an opportunity to conform, each child was offered colors which he preferred and colors which he did not prefer.

The reliability of this method of determining color preferences was tested by administering the color wheel twice to 29 of the children and analyzing their responses for consistency of color preferences. In this analysis, a color was considered to have retained its relative position if its rank changed no more than three places from the first to the second session. The colors which were high-ranking (#1 and #4) and low-ranking (#10 and #13) during the first session did retain their relative positions during the second session. ($X^2 = 29.217$; $p < .001$).

Strength of Color Preferences. The strength of each child's color preferences was then determined. The assumption was that the child who had strong preferences would be less easily influenced than other children when given an opportunity to conform; and therefore, the strength of color preferences should be considered in the matching of control and experimental groups.

For this step in the research, the five colors for each child were arranged in pairs, each color being paired with every other color twice, making a total of 20 pairs. These paired colors were presented to the child as odd-shaped pieces of gummed paper, ostensibly for making a collage. The sequence was such that no color appeared in two consecutive pairs and no color appeared twice in the same shape. The child chose one color from each pair.

The strength of a child's color preferences was then determined by the number of times that he chose the same color in a given pair both times that it was presented. The possible range of color preference scores was from zero to ten.

Conformity to Peers. For this step in the research, the children were assigned to experimental and control groups, matched according to color preference scores, sex and age (within 4 months); and each child constructed a small picture booklet of colored pages (2" x 3").

The children in the experimental group were given an opportunity to conform to peers while constructing their booklets. First, each child was asked to name three freinds; then three identical pages (e.g., the picture of a cow on a red page) were placed before the child, and he was told that these were for his friends. He was then given his choice between a page identical to those for his friends and a page of a different color (e.g., the picture of a cow on a blue page). As in the previous step of the research, the five colors designated for each child were arranged in pairs, each color being paired with every other color twice.

These were presented to the child in such a way that he had an opportunity to choose between red and blue, for example, when his

friends received red and again when his friends received blue. (The sequence of paired colors is described in Appendix B, page 40.)

The assumption underlying this design was that the child who really preferred one of the two colors, would choose that color on both occasions if he were free to use conforming or nonconforming behavior, whereas the conformist would choose the preferred color only when his friends received it, and the nonconformist would choose the preferred color only when his friends did not receive it.

The children in the control group made their choices between the paired booklet pages without an opportunity to conform.

Conformity to Parents. The children in the experimental group repeated the color wheel and the construction of a picture booklet. During this session, they had an opportunity to conform as booklets were made for their parents.

Scoring

For the experimental group, the scoring consisted of a simple count of the number of conforming and nonconforming responses. For the control group, similar scoring was possible by accepting as a "conforming" response the choice of a color which corresponded to a conforming response for the experimental group.

A D-score, or difference score, was figured by subtracting the number of nonconforming responses from the number of conforming responses. The possible range of D-scores was from +20 (complete conformity) to -20 (complete nonconformity).

A task-score was figured by dividing the D-score by the total number of responses. The possible range of task-scores was from +1.00

(complete conformity) to -1.00 (complete nonconformity). This score would be of particular value in a comparison of two or more research instruments which did not offer the same number of opportunities for conforming behavior.

Results

The data for the matched control and experimental groups were analyzed to determine whether the opportunity to conform did influence the responses of the children, and whether the influence was greater in one situation than in another.

If the research instrument provided a valid measure of the influence (positive or negative) of the opportunity to conform, then the children in the experimental group should have larger D-scores than the children in the control group. For the control group, the distribution of "conforming" and "nonconforming" responses would be the result of chance, and therefore, the D-scores for this group should approximate zero. In Table I, the frequency of large and small D-scores are presented for the two groups, the scores for the experimental group being those obtained when there was an opportunity to conform to parents. A Chi-square analysis of these data indicated that the children in the experimental group were influenced by the opportunity to conform to their parents. ($X^2 = 7.331$; $p < .01$).

Similarly, the data obtained when the experimental children had an opportunity to conform to peers (three friends) were analyzed. The responses of the children to this influence were not significantly different from the responses of the children in the control group. ($X^2 = 1.020$; n.s.). This is interpreted as indicating that the

opportunity to conform to parents was more potent than the opportunity to conform to peers.

TABLE I

FREQUENCY OF LARGE AND SMALL D-SCORES OBTAINED BY CONTROL AND EXPERIMENTAL GROUPS OF PRESCHOOL CHILDREN IN A TASK DESIGNED TO MEASURE SOCIAL CONFORMITY AND NONCONFORMITY

(N=200)

	D-Scores*		
	0 to 8	10 to 20	Total
Experimental Group	64	36	100
Control Group	82	18	100

*The D-score is the difference between the number of conforming and nonconforming responses.

The reliability of the instrument was determined by a split-half analysis of the responses of the children when they had an opportunity to conform to parents. The number of conforming responses made by each child during the first and last half of the task were used in this analysis. The Spearman-Brown formula yielded a correlation coefficient of +.779 ($p < .01$). The instrument was accepted as reliable. (For this and subsequent analyses, the experimental group was enlarged to include 20 boys and 20 girls at each of three age levels: below 4-0; 4-0 to 4-11; 5-0 to 5-11. N = 120)

The data were further analyzed for age and sex differences. There were no significant age differences in conforming behavior; however, there were marked sex differences. In Table II, the number of boys and

girls responding with large positive and large negative D-scores is presented. Of the 120 children in the experimental group, 41 had large D-scores. Both boys and girls were influenced by the opportunity to

TABLE II

FREQUENCY OF LARGE POSITIVE AND LARGE NEGATIVE D-SCORES OBTAINED BY PRESCHOOL CHILDREN, BOYS AND GIRLS, IN A TASK DESIGNED TO MEASURE SOCIAL CONFORMITY AND NONCONFORMITY

(N=41)

D-Scores	Boys	Girls	Total
+10 to +20	9	20	29
-10 to -20	10	2	12
Total	19	22	41

conform to parents; however, the girls were primarily conformists, and the boys were both conformists and nonconformists. A Chi-square analysis indicated that this difference between the boys and girls was significant. ($X^2 = 7.351$; $p < .01$. The distribution of D-scores by age and sex is presented in Appendix B, Table V, page 41.)

In the design of the instrument, the assumption was made that strong likes and dislikes would influence a child's conforming behavior. The validity of this assumption was demonstrated in an analysis of the number of times that the children accepted and rejected their favorite color and their least liked color. When conforming required that a child accept one or the other of these two colors, the favorite color was more frequently accepted. ($X^2 = 38.861$; $p < .001$). When conforming

required that a child reject one of these two colors, the least liked color was more frequently rejected. ($X^2 = 69.962$; $p < .001$). These results support Hypothesis 1: The potency of the situation will influence the conforming behavior of the child. The strength of a child's preference for the behavior involved in the research task did influence his conforming behavior.

Summary

A color preference task, designed to measure social conformity and nonconformity, was developed for use with children of preschool age. The task discriminated between children who were compulsive conformists and nonconformists and those who were free to use either conforming or nonconforming behavior. The potency of the situation in which conformity was suggested proved to be a major factor in the task; opportunity to conform to parents had a significant influence on the children's responses, whereas opportunity to conform to peers (three friends) had a negligible influence for this preschool group. No age differences in conforming behavior were apparent. Sex differences were marked. Boys and girls were influenced by the opportunity to conform to parents; but where the girls were primarily conformists, there were both conformists and nonconformists among the boys.

The Measurement of Conformity and Nonconformity in an Impersonal Situation

Subjects

The subjects for this part of the research were 144 children, boys and girls, ranging in age from 2 years 7 months to 5 years 11 months. Children for experimental and control groups were matched on

sex and age (within 4 months) and were chosen so that there were 24 boys and 24 girls in each of three age groups (below 4-0; 4-0 to 4-11; and 5-0 to 5-11).

Form Board Task

A form board task was designed for the measurement of conformity and nonconformity in an impersonal situation. Four form boards were constructed. The pictures on the form boards were a tree, a house, a playground, and a barnyard. Each form board had five holes, and for each hole there were four different pieces which could be used in completing the picture. (Appendix C, Figures 1-4, pages 43-46.)

The design of the form board task was similar to that of the color preference task. Picture pieces for the form boards were paired and the child chose one of each pair. Two sets of paired pieces were made for each board. For example, in the Tree Form Board (Appendix C, Figure 1) the child first chose between the rabbit and the flowers, and later chose between the ball and the grass, for the hole at the base of the tree. Each child was offered the paired pieces twice, making a total of 80 choices for the four form boards. This was done in two sessions with approximately a one week interval between the two.

In this task the opportunity to conform was provided by a line drawing placed behind the form board. In the Tree Form Board, as pictured, a line drawing of flowers is shown at the base of the tree, and the child would choose between the flowers and the rabbit. During the next session a line drawing of the rabbit would be shown, and the child would again choose between the flowers and the rabbit. The underlying assumption was that the child who really preferred the rabbit

would choose the rabbit during both sessions if he were free to use conforming and nonconforming behavior; but the child who was a conformist would choose the rabbit only when the line drawing of the rabbit was shown, and the nonconformist would choose the rabbit only when the line drawing of the flowers was shown.

A control group of children was offered the form boards without the line drawings, i.e., without the opportunity to conform.

One of the stated criteria for a research instrument designed to measure conformity-nonconformity, was that the opportunity to conform be of similar potency for all children. No direct method of controlling the likes and dislikes of the individual children was possible in the form board task; however, many different picture pieces were used (80 in all), and it was assumed that all children would prefer some of the pieces more than others. An analysis of the preferences demonstrated by the control group indicated that this assumption was true. Each pair of picture pieces was offered twice, and a child was considered to prefer one if he chose that picture both times the pair was presented. The range of preference scores was from 16 to 35, out of a possible 40. All of the children had a substantial number of preferences, and the particular pieces preferred by one child were different from those preferred by another.

Scoring

The scoring for the form board task was similar to that for the color preference task. For the experimental group, the number of conforming and nonconforming responses were recorded. A similar scoring was possible for the control group by accepting as a "conforming"

response the choice of a piece which corresponded to a conforming response for the experimental group.

A D-score was figured by subtracting the number of nonconforming responses from the number of conforming responses; and for this task, the possible range of D-scores was from +80 (complete conformity) to -80 (complete nonconformity).

A task-score was figured by dividing the D-score by the total number of responses.

Results

The data for the matched control and experimental children were analyzed to determine whether the opportunity to conform did influence their responses. If the research instrument provided a valid measure of this influence, then the children in the experimental group should have larger D-scores than the children in the control group. As with the color preference task, the frequency of conforming and nonconforming responses demonstrated by the control group would be the result of chance; and therefore, the D-scores for this group should approximate zero. In Table III, the frequency of large and small D-scores are presented for the two groups. A Chi-square analysis of these data indicated that the children in the experimental group were influenced by the opportunity to conform. ($X^2 = 30.573$; $p < .001$).

The reliability of the instrument was determined by a split-half analysis of the responses of the children in the experimental group. The Spearman-Brown formula yielded a correlation coefficient of + .860 ($p < .01$), indicating reliable internal consistency. Correlations among the four separate form boards (Appendix C, Table VI, page 47) were all

significant beyond the .01 level, indicating that the individual form boards are of approximately equal value for the instrument as a whole.

TABLE III

FREQUENCY OF LARGE AND SMALL D-SCORES OBTAINED BY CONTROL AND EXPERIMENTAL GROUPS OF PRESCHOOL CHILDREN IN A TASK DESIGNED TO MEASURE CONFORMITY AND NONCONFORMITY IN AN IMPERSONAL SITUATION (N=144)

	D-Scores		
	0 to 15	16 to 80	Total
Experimental Group	29	43	72
Control Group	62	10	72

The data for the experimental group were further analyzed for sex and age differences. Neither sex differences nor age differences were apparent. In Table IV, the number of boys and girls responding with large positive and large negative D-scores is presented. Of the 72 children in the experimental group, 43 had large D-scores. For boys and girls, the opportunity to conform prompted more conforming behavior than nonconforming behavior. ($X^2 = 15.000$; $p < .001$ The distribution of D-scores by sex and age is presented in Appendix C, Table VII, page 48.)

Two Comparable Form Board Tasks

The form board task might be used to measure changes in the conforming behavior of preschool children if the two halves of the instrument could

be used separately. For this to be possible, a high correlation must exist between the two halves, i.e., between the two sets of paired pictures, and each half must have internal consistency.

TABLE IV

FREQUENCY OF LARGE POSITIVE AND LARGE NEGATIVE D-SCORES OBTAINED BY PRESCHOOL CHILDREN, BOYS AND GIRLS, IN A TASK DESIGNED TO MEASURE CONFORMITY AND NONCONFORMITY IN AN IMPERSONAL SITUATION

(N=43)

D-Scores	Boys	Girls	Total
+16 to +80	17	17	34
-16 to -80	4	5	9
Total	21	22	43

The product-moment correlation coefficient between the two halves of the task was +.849, significant beyond the .01 level.

The internal consistency of each half was determined by correlating the combined scores for the Tree and House form boards with the combined scores for the Playground and Barnyard form boards. The Spearman-Brown formula yielded correlation coefficients of +.860 and +.502 for these two analyses, both significant beyond the .01 level.

These results indicate a high correlation between the two halves of the instrument, and internal consistency for each half. The form boards can be used as two separate instruments for the measurement of

changes in the freedom of preschool children to use conforming and nonconforming behavior.

Summary

A form board task, designed to measure conformity and nonconformity in an impersonal situation, was developed for use with children of preschool age. The task discriminated between children who were compulsive conformists or nonconformists and those who were free to use either conforming or nonconforming behavior. No age differences or sex differences were apparent. Conforming behavior, rather than nonconforming behavior, was demonstrated most frequently by the children who were influenced by the opportunity to conform.

The possible use of the form board task as two separate instruments, in test-retest research, was indicated by a high correlation between the two halves of the instrument and the internal consistency of each half.

COMPARISON OF THE TASKS DESIGNED TO MEASURE CONFORMITY AND NONCONFORMITY

More than one task for the measurement of conforming and nonconforming behavior was developed in order that the influence of different situations be studied. It was possible that the conformity suggestion might be more potent in one situation than in another. In the social conformity task, this proved to be true; parents were a more potent influence than peers.

A comparison of the results of the social conformity tasks (color preferences) and the impersonal conformity task (form boards) indicated a difference in the potency of these conformity suggestions for individual

children. More of the boys responded negatively to the opportunity to conform to parents than responded negatively to the opportunity to conform in an impersonal situation.

Many children who responded freely on one task, as indicated by a task-score below 20, were not free in their responses on the other tasks. On the form board task, 29 children were free in their use of conforming and nonconforming behavior; and on the color preference task, 17 children responded freely when there was opportunity for conformity to parents, and 34 responded freely when there was opportunity for conformity to peers; however, only five children responded freely in all three situations.

These results support Hypothesis 1: The potency of the situation will influence the conforming behavior of the child. In each experimental situation differences were observed among the children in their responses to the opportunity to conform, and the child who was influenced in one situation was not necessarily influenced in another.

The conclusion to be drawn from this comparison is that conformity-nonconformity must be measured in several different situations if the child who is free to use conforming and nonconforming behavior is to be identified.

EXPLORATION OF THE RELATIONSHIP OF CONFORMITY AND NONCONFORMITY TO FREEDOM-TO-EXPRESS

An instrument for the measurement of a preschool child's freedom to express himself in exploring and manipulating objects in his environment was developed by Azbill (1961) under the supervision of the writer. (Appendix A, page 36). Essentially, a child's freedon-to-express is

his psychological freedom; and stated in terms of response behavior, the opposite of this freedom would include inhibited behavior (behavior in response to restraining forces) and compulsive behavior (behavior in response to compelling forces).

The compulsive quality of a child's behavior should be reflected in his freedom-to-express and in his conforming and nonconforming behavior. This expectation prompted a small exploratory study of the relationship between these two variables. The expected relationship is stated in the following hypotheses:

Hypotheses 2. The relationship between the conformity-nonconformity dimension in children's behavior and their freedom to express themselves in exploring and manipulating their environment will be curvilinear.

Hypothesis 3. The relationship between children's compulsiveness in their conformity or nonconformity and their freedom to express themselves in exploring and manipulating their environment will be linear.

A modified form of the freedom-to-express instrument, described in Appendix A, was administered to 12 boys and 12 girls who had participated in the color preference task (social conformity-nonconformity) and the form board task (impersonal conformity-nonconformity). Descriptive data and scores obtained by these children are presented in Appendix D, Table VIII, pages 50-51.

No relationship whatsoever exists among the rank scores obtained by these children in the three experimental situations. The results offer no support for the two hypotheses stated above. Child-136-F lacked freedom and conformed to an extreme in all three situations, and Child-68-F was moderately free in all three situations; but the behavior of the other children varied greatly from one situation to another.

The freedom-to-express instrument is a less precise instrument than those developed for the measurement of conformity-nonconformity; and a child's freedom, as indicated by the variety of his play responses when given an opportunity to play alone, is necessarily affected by unknown and/or uncontrolled variables. The value of this instrument appears to be in its use in exploratory studies in which it can serve to suggest relationships and variables which warrant study or control in future research.

SUMMARY AND CONCLUSIONS

Two instruments were developed for use with preschool children in the measurement of conforming and nonconforming behavior. One, a color preference task, was designed to measure social conformity, i.e., conformity to parents or peers. The other, a form board task, was designed to measure conformity in an impersonal situation. Both tasks provided the children with opportunity to follow a model or respond freely according to their own preferences. The assumption underlying the design of both instruments was that the child who is free to use either conforming or nonconforming behavior will make his choices independent of the suggestions for conformity.

In the color preference task, each child was given an opportunity to conform as he chose colored pages for a picture booklet. (a) First, each child indicated his color preferences by ranking 13 colors. Five colors which ranged from his first choice to his last, were chosen for use in the subsequent steps of the research. (b) The strength of each child's color preferences was then determined. The five colors were presented in pairs, each color being paired with every other color twice.

The strength of the child's preferences was indicated by the number of times he chose the same color in a given pair both times that it was presented. The assumption was that children with strong color preferences would be less easily influenced in their color choices than other children; therefore, color preference scores were used in matching children for control and experimental groups. (c) Each child's freedom to use conforming and nonconforming behavior was then determined as he constructed a picture booklet for his parents (or three friends) and one for himself. For each page in the booklet, the child was given his choice between a page identical to the ones for his parents or one of a different color. As in the previous step of the research, the five colors were arranged in pairs, each color being paired with every other color twice, making a total of 20 pairs. (Children in the control group made their choices between the paired colors without the opportunity to conform.)

In the form board task, each child was given an opportunity to conform as he chose pieces to complete the pictures in four form boards. Each form board had five holes, and for each hole there were four different pieces which could be used in completing the picture. The picture pieces were paired, and the child chose one from each pair. The opportunity to conform was provided by a line drawing placed behind each form board. The paired pieces were offered to the child twice. This was done in two sessions with approximately a one week interval between the two. During the first session the line drawings showed one of the pictures in each pair, and during the second session the line drawings showed the other picture. (Children in the control group made their choices between the paired picture pieces without the opportunity to conform to the line drawings.)

Both instruments are adaptable for use in test-retest research. A second color preference task, comparable to the first, can be provided for a study of changes in social conformity-nonconformity if each child again indicates his color preferences and if different pictures are used for the retest booklet. The form boards can be used as two separate and comparable instruments for a study of changes in conformity-nonconformity in an impersonal situation. The form boards as constructed have two sets of paired picture pieces. Each set can be used independently, thus providing two comparable instruments. This possibility was indicated by a high correlation between the two halves of the form board instrument and by the internal consistency of each half.

Both instruments discriminated between children who were free to use conforming and nonconforming behavior and children who were to some degree compulsive conformists or nonconformists. For individual children the opportunity to conform was more potent in one situation than in another, indicating that several measures of conformity-nonconformity are needed if the young child who is free in his use of conforming and nonconforming behavior is to be identified.

Insofar as social conformity was concerned, opportunity to conform to parents had a significant influence on the children's responses, whereas opportunity to conform to peers (three friends) had a negligible influence. No age differences were apparent, but sex differences were marked. Boys and girls were influenced by the opportunity to conform to parents; but where the girls were primarily conformists, there were both conformists and nonconformists among the boys.

The children's responses to the opportunity to conform in an impersonal situation (the form board task) indicated neither age nor

sex differences. Conforming behavior, rather than nonconforming, was demonstrated most frequently by boys and girls alike.

IMPLICATIONS FOR FUTURE RESEARCH

Instruments for the Measurement of Other Characteristics

Longitudinal studies of creative ability are needed, and the initiation of such studies is dependent upon the development of instruments which can be used for the early identification of characteristics which may be related to creativity. Such research instruments should be of inherent interest to young children, should be independent of ability insofar as possible, and should provide situations in which simple behavioral responses can be scored objectively. The conformity-nonconformity instruments developed in the present research meet these general criteria.

Willingness to Try Difficult Tasks

Plans for the development of instruments for the measurement of a preschool child's willingness to try difficult tasks have been formulated and the research is in progress sponsored by a grant from the U. S. Office of Education. (Cooperative Research Project #2470.) Games appropriate to the skills of young children are being developed. Plans include adapting the games to the actual ability of each child and letting him choose to play that which is easy or that which is difficult relative to his own ability.

Curiosity

Plans for the development of an instrument for the measurement of a preschool child's curiosity have been formulated. The focus is on

"preference for the novel", which is accepted by the writer as a major factor in curiosity. Materials for the instrument will be similar to those used in the color preference task, developed in the present research for the measurement of social conformity-nonconformity. The child will make a picture booklet by choosing between designs or pictures which are familiar to him and ones which are novel or new to him.

The Relationships Among Characteristics

Creative ability is a multidimensional quality and a variety of instruments are needed for the identification of the potentially creative preschool child. As instruments are developed for the measurement of characteristics which may be related to creative ability (e.g., freedom to use conforming and nonconforming behavior, willingness to try difficult tasks, and curiosity), the relationships among these characteristics can be studied. Two approaches to the study of these relationships are proposed. (1) The administration of the several instruments to a group of preschool children for the purpose of identifying children who score high and children who score low in the characteristics measured; and (2) the administration of the several instruments to children from different socio-economic and educational backgrounds.

An exploratory study of the influences in the backgrounds of children who score high and children who score low in the several characteristics could indicate testable hypotheses about the development of characteristics essential for creative expression. The results of the conformity-nonconformity study indicate that few children will score high or low in all characteristics measured; therefore, case study analyses may be indicated for the formulation of hypotheses.

The study of children from different socio-economic and educational environments may also indicate testable hypotheses about the development of characteristics essential for creative expression. A study of children enrolled in Montessori schools, traditional (developmental) nursery schools, and nursery schools and kindergartens established in deprived areas is being formulated. (The administrators of specific schools have expressed an interest in participating in such a study.) Short term longitudinal studies of these children and comparative studies of children from socio-economic environments similar to the environments of the children in the several cooperating schools should further help to identify factors which encourage and factors which stifle the development of creative ability.

The design of the studies described above must provide for a study of sex differences. In the present research, significant sex differences in social conformity were indicated. This suggests that the differences in cultural expectations for boys and for girls may provide a major clue to the social influences which affect the development of creative ability, particularly during the early years of socialization.

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APPENDIX A

THE MEASUREMENT OF FREEDOM-TO-EXPRESS

A study of preschool children's psychological freedom or their freedom to express themselves in exploring and manipulating the objects in their environment, was undertaken by Azbill (1961) under the supervision of the writer*. The freedom with which a child expressed himself was determined by the variety of his play responses when he was given an opportunity to play by himself with a series of simple toys.

Procedure. Individually each child was taken to the research laboratory, a room with which he was familiar. In the room there was a small rectangular table with two chairs. Across the middle of the table was a strip of black masking tape. On the table were two simple toys, e.g., wax discs and a pan of water, one at each end with the masking tape serving as a "psychological" barrier between the two. The child was told that he could do whatever he wanted to with the toys. The experimenter then excused herself, ostensibly to get more toys, and went to an observation booth where she observed the child through a one-way mirror and dictated on a tape recorder a running record of everything the child did. When the child was through playing with one set of toys, the experimenter removed one of the toys and replaced it with a new toy. This process was repeated and the child played with ten sets of toys. There was no time limit set for the child's play; each had his own way of indicating when he was through. Some called the experimenter; some hid under the table; some looked out the window.

Scoring. The record of the child's play was transcribed and edited. (Editing involved the condensation of elaborate details and the elimination

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*State Project 128, Research Foundation, Oklahoma State University.

of irrelevant material.) The edited record was then scored by a trained judge who credited the child for the number of different ways in which he played with each set of toys. Credit was given for sensory experiences and manipulation, action games, construction, and combination of the two toys in play. In this way each child received ten raw scores, one for each set of toys.

Raw scores were then converted into rank order scores, inasmuch as the instrument could be used only to determine the relative freedom of each child within the group being studied. Rank order scores were figured for each of the ten sets of toys, and the total of the ten rank order scores was the child's "freedom score". A wide range of scores, from 20.5 to 97.0, indicates the ability of the instrument to discriminate between the child who is relatively inhibited and the child who is relatively free.

Validity and Reliability. The instrument was accepted as having "face validity" inasmuch as each child was given opportunity to play freely by himself in ten different situations in which his freedom to play was demonstrated in a variety of ways. The scoring of trained judges, which yielded a correlation coefficient of .929, significant at the .05 level, was accepted as reliable. The reliability of the instrument itself was determined by a split-half correlation which yielded a coefficient of .895, significant at the .01 level.

Inasmuch as creative ability is accepted as a quality different from the ability measured by intelligence tests, a comparison was made of the children's freedom scores and their IQ's. The relationship was negative, significant at the .05 level. This indicates that the "freedom" instrument is not measuring intelligence per se; and the negative

relationship suggests that intelligence is a variable which warrants attention in future studies of the creative ability of preschool children.

Modification of the Instrument. The instrument was modified so that it could be administered in one session rather than two. The procedure and scoring remained the same; but the toys, presented to the child in pairs, were all different, and he played with each toy only once. Previously, two sessions were required for the presentation of the same number of toys, and the child played with most of the toys twice.

APPENDIX B

SEQUENCE OF PAIRED COLORS PRESENTED TO PRESCHOOL CHILDREN IN A COLOR PREFERENCE TASK DESIGNED TO MEASURE SOCIAL CONFORMITY AND NONCONFORMITY

Each child ranked 13 colors in order of preference. The colors ranked 1, 4, 7, 10, and 13, were then used in the subsequent steps of the research. Paired colors were presented to the child as follows: (A = 1st choice color; B = 4th choice color; etc.)

1. A - B	11. C - D
2. C - D	12. A - B
3. E - A	13. E - C
4. C - B	14. D - A
5. D - E	15. B - E
6. A - C	16. A - C
7. B - D	17. D - E
8. E - C	18. C - B
9. D - A	19. E - A
10. B - E	20. B - D

In this sequence no color appeared in two consecutive pairs, and each color appeared on the right and on the left an equal number of times. The conforming color was presented on the left during the first half of the sequence and on the right during the second half; thus the child who chose all colors from one side would obtain a D-score of zero, indicating that he was not influenced by the opportunity to conform.

TABLE V

DISTRIBUTION OF D-SCORES OBTAINED BY PRESCHOOL CHILDREN, BY SEX AND AGE, IN A COLOR PREFERENCE TASK DESIGNED TO MEASURE SOCIAL CONFORMITY AND NONCONFORMITY

(N=120)

	D-Scores*			
Sex and Age**	Nonconforming (-10 to -20)	Free (-8 to +8)	Conforming (+10 to +20)	Total
Boys				
5:0 - 5:11	3	14	3	20
4:0 - 4:11	5	10	5	20
Below 4:0	2	17	1	20
Total	10	41	9	60
Girls				
5:0 - 5:11	1	11	8	20
4:0 - 4:11	0	14	6	20
Below 4:0	1	13	6	20
Total	2	38	20	60
Total	12	79	29	120

*The D-Score is the difference between the number of conforming and nonconforming responses.

**Ages are expressed in years and months.

APPENDIX C

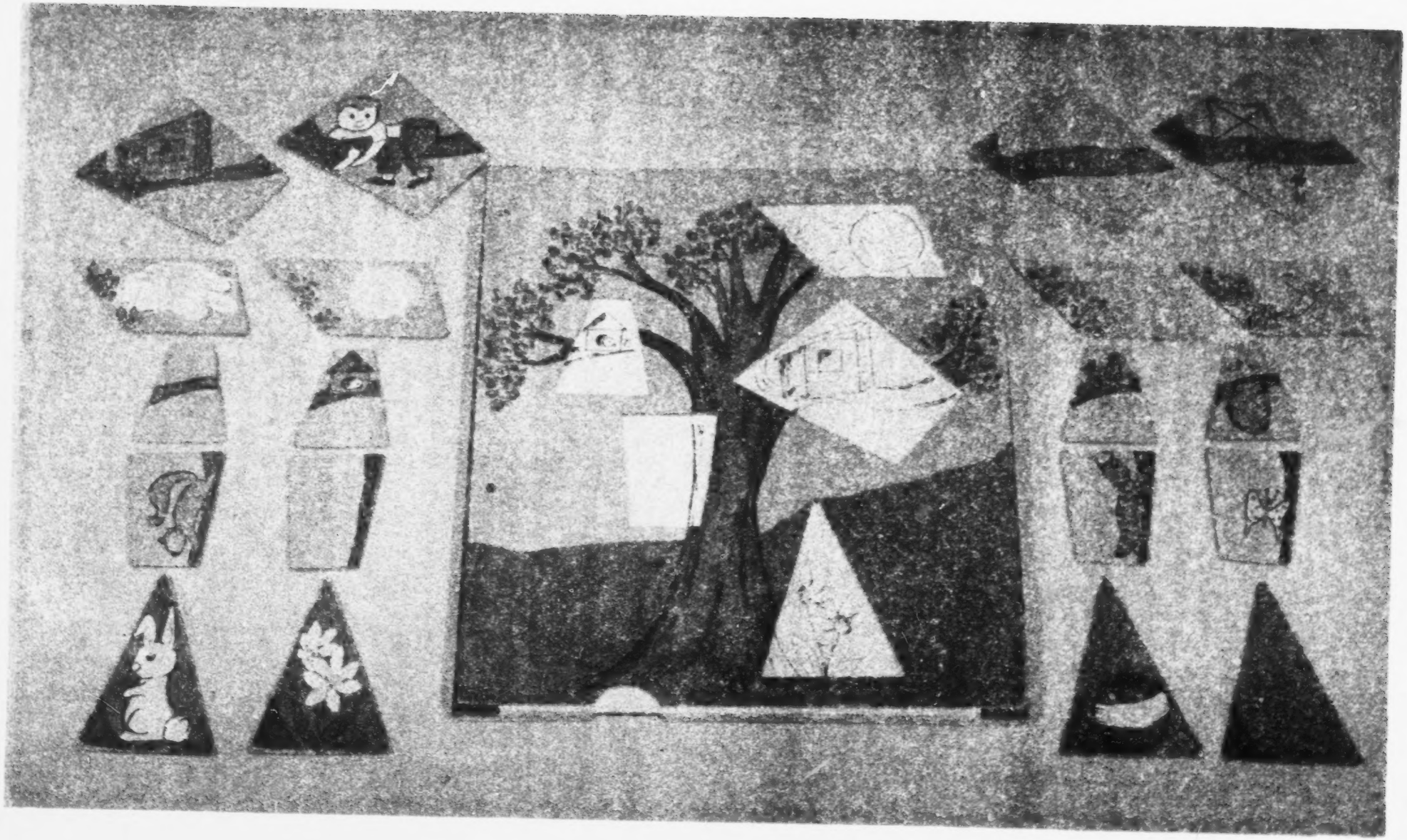

Figure 1. Tree Form Board

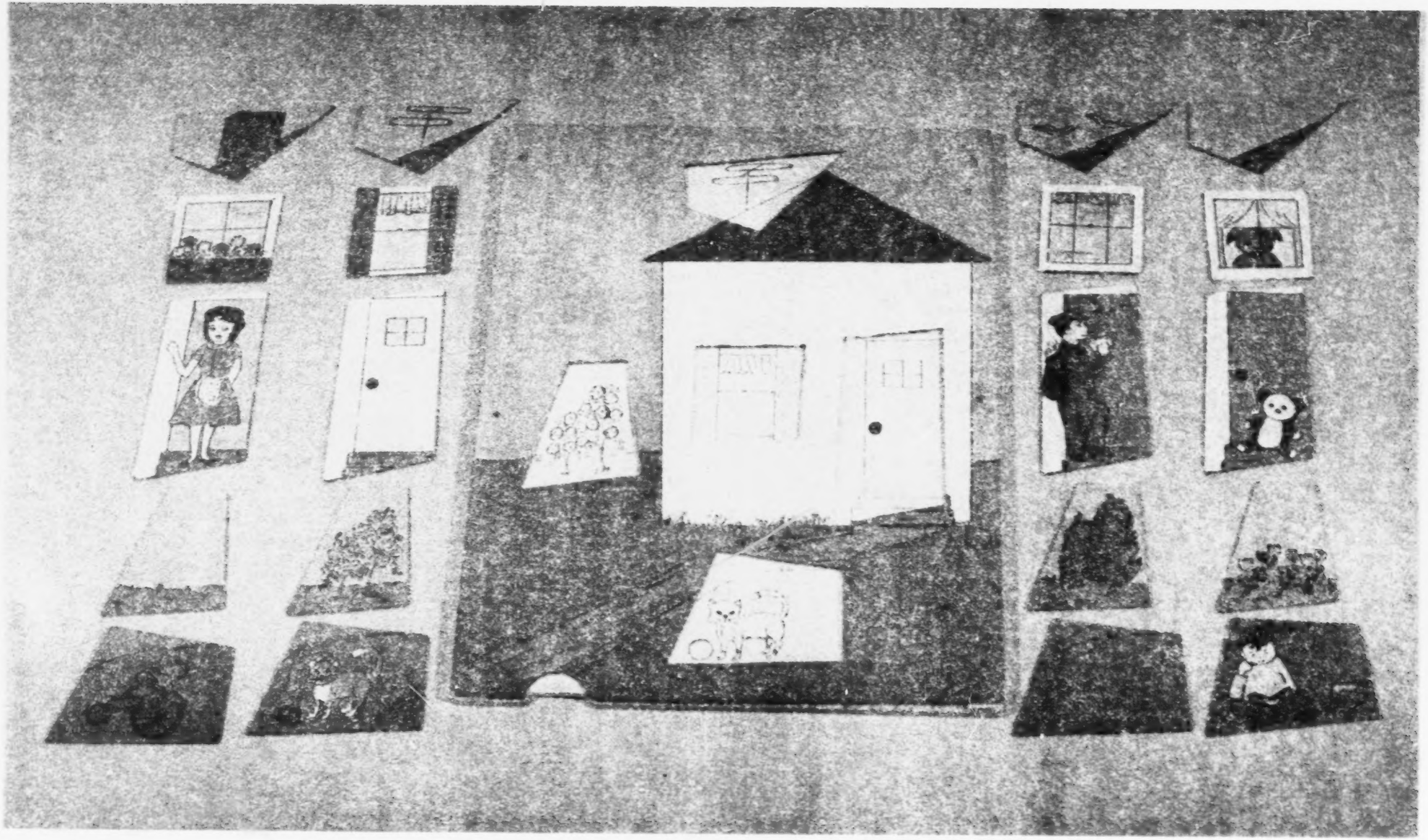

Figure 2. House Form Board

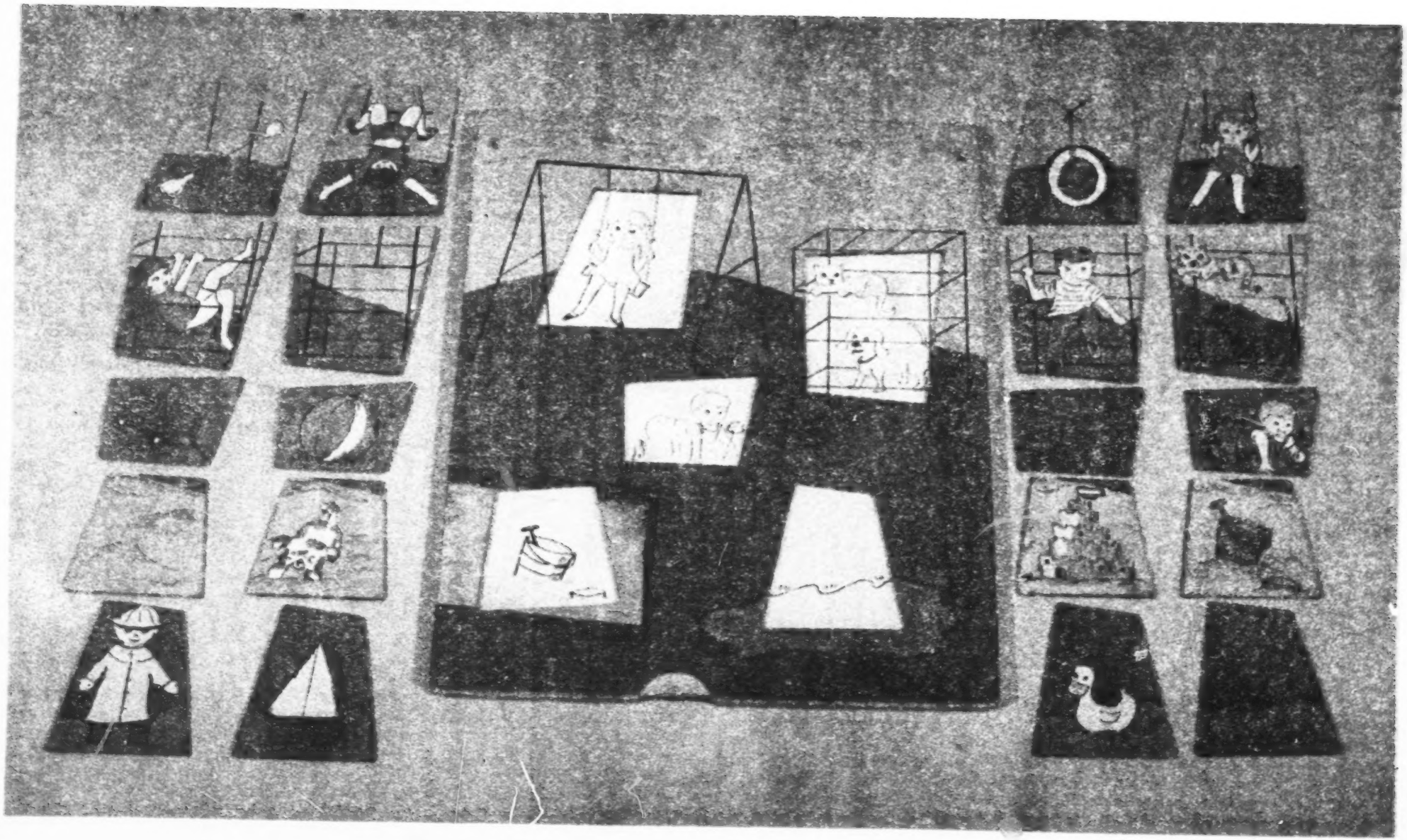

Figure 3. Playground Form Board

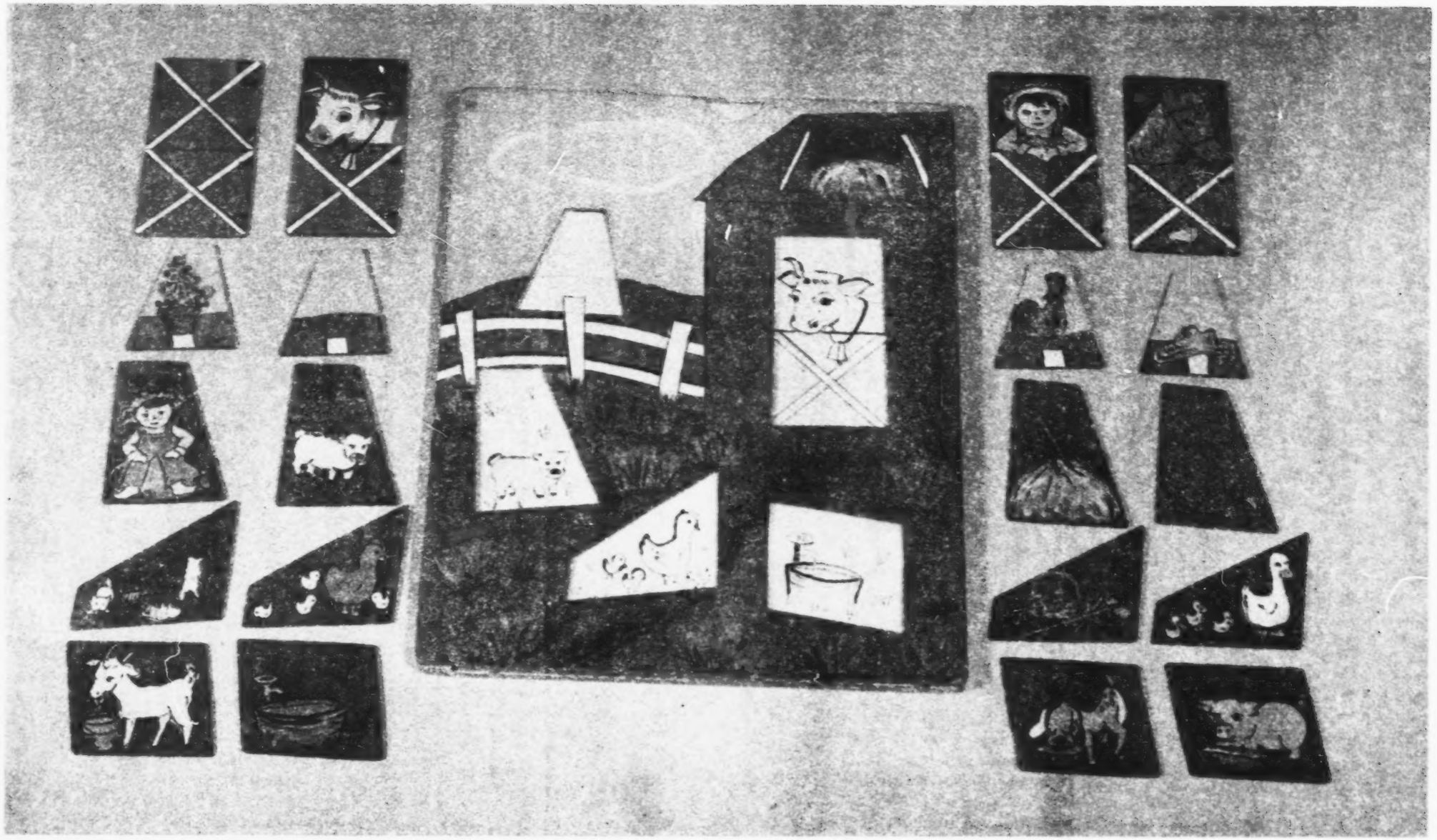

Figure 4. - Barnyard Form Board

TABLE VI

PRODUCT-MOMENT CORRELATIONS AMONG FOUR FORM BOARDS DESIGNED TO MEASURE CONFORMITY AND NONCONFORMITY IN AN IMPERSONAL SITUATION

Form Boards	r
1. Tree - House	+.826
2. Tree - Playground	+.841
3. Tree - Barnyard	+.750
4. House - Playground	+.723
5. House - Barnyard	+.905
6. Playground - Barnyard	+.865

TABLE VII

DISTRIBUTION OF D-SCORES OBTAINED BY PRESCHOOL CHILDREN, BY SEX AND AGE, IN A FORM BOARD TASK DESIGNED TO MEASURE CONFORMITY AND NONCONFORMITY IN AN IMPERSONAL SITUATION

(N=72)

	D-Scores*			
	Nonconforming	Free	Conforming	
Sex and Age**	(-16 to -80)	(-15 to +15)	(+16 to +80)	Total
Boys				
5:0 - 5:11	2	3	7	12
4:0 - 4:11	1	9	2	12
Below 4:0	1	3	8	12
Total	4	15	17	36
Girls				
5:0 - 5:11	2	5	5	12
4:0 - 4:11	1	5	6	12
Below 4:0	2	4	6	12
Total	5	14	17	36
Total	10	29	33	72

*The D-Score is the difference between the number of conforming and nonconforming responses.

**Ages are expressed in years and months.

APPENDIX D

TABLE VIII

DESCRIPTIVE DATA AND SCORES OBTAINED BY INDIVIDUAL PRESCHOOL CHILDREN IN RESEARCH TASKS DESIGNED TO MEASURE SOCIAL CONFORMITY AND NONCONFORMITY, IMPERSONAL CONFORMITY AND NONCONFORMITY, AND FREEDOM-TO-EXPRESS

			Social Conformity		Impersonal Conformity	
		Freedom-to-Express	Conformity to Parents		Form Board Task	
Code No.	Age*	Rank Score	Rank Score	(Task-score)	Rank Score	(Task-score)
200-F	4:8	1	23.0	(+1.00)	19.0	(+.43)
76-F	4:11	2	17.0	(+ .60)	8.5	(-.13)
104-M	5:0	3	12.0	(- .40)	15.5	(+.33)
14-M	3:7	4	3.0	(+ .10)	14.0	(+.28)
108-M	3:11	5	10.0	(+ .30)	15.5	(+.33)
61-M	4:4	6	14.5	(+ .50)	23.0	(+.78)
156-F	4:4	7	7.0	(- .20)	17.5	(+.40)
197-M	3:9	8	1.0	(0.00)	21.0	(-.55)
68-F	4:8	9	7.0	(+ .20)	11.0	(+.23)
44-M	5:1	10	17.0	(- .60)	3.0	(-.05)
97-F	4:10	11	3.0	(- .10)	8.5	(+.13)
36-M	4:7	12	20.0	(+ .80)	6.5	(+.10)
174-M	4:5	13	3.0	(+ .10)	4.5	(+.08)
45-F	3:7	14	19.0	(+ .70)	3.0	(+.05)
60-F	4:8	15	23.0	(+1.00)	24.0	(+.85)

TABLE VIII (Continued)

		Freedom-to-Express	Social Conformity		Impersonal Conformity	
			Conformity to Parents		Form Board Task	
Code No.	Age*	Rank Score	Rank Score	(Task-score)	Rank Score	(Task-score)
142-M	3:6	16	17.0	(- .60)	3.0	(+.05)
43-F	4:9	17	12.0	(- .40)	22.0	(+.63)
18-M	4:5	18	7.0	(- .20)	10.0	(+.18)
134-M	4:7	19	21.0	(+ .90)	6.5	(+.10)
182-F	4:9	20	12.0	(- .40)	4.5	(-.08)
136-F	4:5	21	23.0	(+1.00)	20.0	(+.53)
165-F	3:11	22	7.0	(+ .20)	12.5	(-.25)
135-F	3:7	23	7.0	(+ .20)	17.5	(+.40)
147-M	4:11	24	14.5	(- .50)	-12.5	(-.25)

*Ages are expressed in years and months.